From: Helder, Dirk
To: Wu, Jennifer
Sent: 8/13/2014 3:18:37 PM
Subject: RE: Pls. review: Pesticides draft rationale for OR CZARA

Jennifer,
Here is some information on the AgDRIFT model used by the pesticide program. I have enclosed a link to the entire document and the text as well, this is from a SAP meeting. I have highlighted the 10 ft. release height assumption that goes into the Tier 1 modeling work. For most traditional agriculture scenarios the 10 ft. release height is used and for mosquito adulticide scenarios I believe 300 ft. is used, but those mosquito products are designed to drift in order to effectively kill adult mosquitos. DH

http://www.epa.gov/scipoly/sap/meetings/1997/december/spraydrift.htm

THE AgDRIFT MODEL

A copy of the AgDRIFT model and supporting documentation have been provided to the SAP separately. The following is a summary of AgDRIFT.

The AgDRIFT model was developed to provide predictive support for matrix categories or real-world situations that could not be represented from the field data.

AgDRIFT, which was developed under the CRADA between EPA/ORD and the SDTF, "predicts the motion of spray material released from aircraft . . . toward a prediction of spray drift" (EPA, 1997). AgDRIFT, which was derived from the earlier drift model AGDISP, is divided into three tiers:

Tier I

The first-tier assessment is a screen that allows the user to evaluate: (1) off-site deposition out to 1,000 ft downwind for a series of atomization regimes, and (2) the potential effectiveness of buffer zones for mitigation. Current generic label instructions do not specify specific droplet regimes for application, but call for the largest droplet sizes that will provide sufficient control and coverage. Therefore, this tier uses preset model runs which incorporate recommended upper limits consistent with good application practices as input values, providing a "reasonable but conservative" estimate of spray drift. Some of these assumptions include:

- 10 mph winds perpendicular to flight path
- neutral stability
- short grassed fields
- moderate evaporation scenario
- application height of 10 ft
- Air Tractor AT-401 aircraft
- no nozzles beyond 3/4 of wingspan
- aqueous carrier

The preset model runs of the Tier I aerial analysis use droplet regimes from British Crop Protection Council, which are defined as very fine, fine, medium, coarse and very coarse. Each threshhold is defined by a single droplet size spectrum. The correspondence between atomization category and spray application rate was based on SDTF wind tunnel studies A92-003 and A92-004.

Model simulations were performed to define downwind drift along these threshholds, thereby developing a series of deposition regimes corresponding to the spray classification regimes. If no spray quality specification is included on the

product label, then the fine/medium spray threshhold curve is to be used.

Tier I model curves are also available for ground sprayer and airblast sprayer assessments. Drift estimates by this screen are based solely on SDTF field data from 1995. Ground sprayer simulations allow the user to choose between high or low boom height. Orchard airblast simulations are provided for normal, dense or sparse tree spacings, as well as for individual crops. Higher tier simulations are not available for these two application methods. The ground sprayer and orchard airblast capabilities of AgDRIFT are not being considered by this SAP.

The model allows the user to choose between the various droplet sizes and the size of the receiving water body (including a standard EPA pond scenario). If the concentration of the pesticide in the water body from drift exceeds a level of concern, the user can specify buffer zones of various widths to evaluate how wide a buffer zone might be necessary to mitigate the concern.

From: Wu, Jennifer
Sent: Tuesday, August 12, 2014 1:21 PM
To: Henning, Alan; Peterson, Erik; Helder, Dirk; Woodruff, Leigh; Liu, Linda; allison.castellan@noaa.gov; Carlin, Jayne; Waye, Don; Carvalho, Gabriela
Cc: Fleming, Sheila; Allen, Elizabeth
Subject: Pls. review: Pesticides draft rationale for OR CZARA

Hi Everyone,

Thanks very much for your comments on the Pesticides Issue Paper. I'm working to incorporate the comments and information I got from people and will be sending this out later this week early next week, FYI. The briefing for management is on August 20.

The attachment above is the draft rationale for the pesticides in forestry issue for OR CZARA. This is probably the most important piece to review, since this is what's published as the basis for our decision on pesticides. It's also the basis for what the issue paper is based on, so collectively describes what we plan to do, what we looked at, and what our determination is. If you're going to look at anything, this is the document to look at! If you can get me comments by Monday, August 18, I'd really appreciate it.

And for what's ahead, I'll be wrapping up response to comments shortly, so that should be the last piece for everyone to review. Let me know if you have questions, and thanks again.
Jenny Wu
USEPA Region 10
Office of Water and Watersheds (OWW-134)
Environmental Engineer, Watershed Unit
1200 6th Avenue, Suite 900
Seattle, WA 98101
(206)553-6328